Remarks

Applicants request entry of the foregoing amendments, entry of the attached terminal disclaimer, consideration of the following remarks and reconsideration of the rejections set forth in the office action mailed October 9, 2008. Claims 5, 9, 15-19, 22, 24 and 26 have been withdrawn. Claim1 has been amended.

Restriction was required under 35 USC 121 and 372 to:

Group I, claims 1-17 and 20-25, drawn to a process for the preparation of thermoset materials and objects.

Group II, claim 15, a woven or knotted fabric.

Group III, claims 18 and 26, drawn to a thermoset object.

Group IV, claim 19, drawn to the process wherein the mixture further comprises fibers, mats and/or woven fabric.

Applicants hereby affirm the verbal election of Group I, claims 1-17 and 20-25.

The inventions listed as Groups I, II, III and IV where held to not be directed to a single general inventive concept under PCT rule 13.1. The application was argued to contain claims directed to more than one species of the generic invention. Applicants hereby confirm the verbal election of species involving claims 1-4, 6-8, 10-14, 20, 21, 23and 25:

a) bisphenol A diglycidal ether.

b) polystyrene-polybutadiene-poly(methyl methacrylates) S-B-M triblock copolymer.

c) 4.4'-methylenebis(3-chloro-2,6-dimethylaniline) M-DEA

d) same as c).

e) Preparation by co-weaving of claim 14.

Claims 1-4, 6-8, 10-13, 20, 21, 23 and 25 were provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over claim 1-14 and 18-23 of copending application no. 10/580,371. Filed herewith is a terminal disclaimer in

compliance with 37 CFR 3.73(b). Applicants request entry of the terminal disclaimer and withdrawal of the rejection.

Claims 1, 20 and 21 were rejected under 35 USC 103(a) as being unpatentable over Boisseau et al., Patent No 6,685,985 and Japanese Patent No. 6-57101. Applicants respectfully submit that the cited references fail to render obvious the present invention. The present invention is direct toward the discovery of a process to provide enhanced control of the reaction of a reactive thermosetting system whereby long shelf life or "pot time" is provide with no degradation in the properties of the final themroset composite material or item. The process of the present invention makes it possible to produce semifinished products, such as reactive textiles or films for composites that have a long shelf life in the unreacted state.

The semifinshed products comprise two formulations, an epoxide prepolymer and a hardener. In the process of the present invention, both the epoxide prepolymer and the hardener are each treated independently, prior to mixing, with a rheology regulating agent. It was discovered that after treating both, independently, with a rheology regulating agent, the epoxide prepolymer and the hardener could be placed into close contact with each other, such as by forming them into a semifinished product, without any significant reaction between the epoxide prepolymer and the hardener. The semifinished products are stable during storage but they can react together to form a thermoset material/component when the temperature and/or pressure is increased. The process of the present invention avoids the prior art problem of premature reaction between the epoxide prepolymer and hardener. The pretreatment of both the epoxide prepolymer and the hardener was discovered to make it possible to form semifinished products, such as reactive textiles or films for composites from the combination of the epoxide prepolymer and the hardener which are stable during storage but react when the temperature and/or pressure is increased to form the desired thermoset material/object.

Applicants submit that the cited references fail to render obvious the process of the present invention wherein both the epoxide prepolymer and the hardener are treated independently with a rheology regulating agent prior to mixing of the epoxide prepolymer and hardener. While the use of rheology regulating agents is known, it is submitted that addition of rheology regulating agents independently to both an epoxide prepolymer and a hardener to

regulate or control the reaction between the two components is not known or obvious.

Boisseau et al. '985 discloses a coating, such as paint, in which sagging in vertical applications and orange peel in horizontal applications is minimized by the addition of a rheology control agent to the mixture. Applicants respectfully submit that Boisseau et al. '985 fails to disclose the use of rheology regulating agent(s) independently in the two components of a mixture prior to mixing whereby reaction between the components is regulated. Applicants submit that the teaching of the use of rheology regulating agent as a component of the mixture disclosed in Boisseau et al.'985 fails to recognize the problem solved by the present invention or render obvious the process of the present invention which solves the problem. The method of Boisseau et al. '985 controls the "flow out" of the paint material to improve its final properties. There is no indication or teaching of the use of rheology regulating agents to control a reaction as discloses in the present process. The comparative examples of the present application clearly show that the "reaction control" provided by the process of the present invention is provided in the independent addition of the rheology regulating agent and not when all components are mixed at the same time.

Japanese Patent No. 6-57101 fails to disclose the process of the present invention wherein both the epoxide prepolymer and the hardener are treated independently with a rheology regulating agent prior to mixing of the epoxide prepolymer and hardener to control reaction of the components when they are mixed. Japanese Patent No. 6-57101 discloses a combination that includes an epoxy resin, a phenol, and a fatty acid-treated calcium carbide as a rheology control agent. As with Boisseau et al. '985, there is no disclosure of the use of rheology regulating agents to control a reaction as discloses in the present process via independent addition to both the epoxy resin and the phenol. Even were it obvious to combine Boisseau et al. '985 with Japanese Patent No. 6-57101, applicants submit that the present invention is not render obvious as the advantage of independent addition of the rheology regulating agent is not disclosed or rendered obvious.

Claims 1-4, 6-8, 10-13, 20, 21, 23 and 25 were rejected under 35 USC 103(a) as being unpatentable over French Patent No. 2,841,252 and Court et al. US Patent No. 6,894,113. Applicants submit that the references fail to render obvious the present invention.

French Patent No. 2,841,252 discloses the use of rheology regulating materials in a combination comprising a thermosetting resin and a thermoplastic material. Applicants submit that that there is no disclosure of the addition of rheology regulating materials independently to both an epoxide prepolymer and a hardener before they are mixed in order to control the reaction between them after they are mixed.

Court et al. '113, discloses a thermoset material exhibiting improved impact resistance comprising a thermoset resin and a specified impact modifier. At column 8, lines 35-49 it discloses the method of forming the claimed material wherein the resin and the impact modifier are mixed. Thereafter, that material is milled and the hardener added. Applicants submit that there is no teaching of a process wherein a rheology regulating agent is added independently to both an epoxide prepolymer and a hardener prior to them being mixed in order to control the reaction between the epoxide prepolymer and the hardener after they are mixed.

Applicants submit that even were it obvious to combine French Patent No. 2,841,252 and Court et al. '113, the present invention is not made obvious. The examiner has argue that it would be obvious to add a rheology regulating agent to both a resin and a hardener to optimize the flowability of each components. However, this is not taught or made obvious by any of the references cited by the examiner. None of the cited references disclose the addition of a rheology regulating agent independently to a hardener for any reason. Furthermore, none of the cited references provide any indication that adding a rheology regulating agent to both the epoxide prepolymer and the rheology regulating agent independently, as set forth in the present invention will control the reaction between an epoxide prepolymer and a hardener so as to provide control over the reaction as evidenced by enhance shelf life. The comparative examples of the present application clearly set out the "reaction control" provided by the process of the present invention is provided in the independent addition and not when all components are mixed at the same time. Applicants submit that neither French Patent No. 2,841,252 nor Court et al. '113, singly or in combination render obvious the present invention and the rejection should be withdrawn.

Claim 14 was rejected under 35 USC 103(a) as being unpatentable over copending application no 10/580,371, French patent and Court et al, further in view of Perez et al. 5,709,948. Applicant submit that neither copending application no 10/580,371, nor Perez et al. 5,709,948 cure the deficiencies discussed above with respect to the French patent and Court et al. '113.

Applicants submit that the cited references fail to render obvious the present invention. A terminal disclaimer has been filed with respect to copending application no. 10/580,371. French patent and Court et al. have been discussed above. Perez et al. '948 discloses a curable composition which comprises a curable epoxy resin, an effective amount of a curative for the curable epoxy resin, and a fully prepolymerized functionalized polyolefin resin, the composition being free of epoxidized natural and/or synthetic rubber. It is submitted that there is no disclosure, either express or implied, of a process of the present invention wherein an epoxide prepolymer and a hardener are treated independently with a rheology regulating agent prior to mixing of the epoxide prepolymer and hardener to control reaction of the components when they are mixed.

None of the cited references disclose the addition of a rheology regulating agent independently to a hardener for any reason. Furthermore, none of the cited references provide any indication that adding a rheology regulating agent to both the epoxide prepolymer and the rheology regulating agent independently, as set forth in the present invention, will control the reaction between an epoxide prepolymer and a hardener after they are mixed so as to provide control over the reaction as evidenced by enhance shelf life. The comparative examples of the present application clearly set out the "reaction control" provided by the process of the present invention is provided in the independent addition and not when all components are mixed at the same time. Applicant submit that neither copending application no 10/580,371, French patent, Court et al '113, nor Perez et al. '948, singly or in any combination render obvious the present invention and the rejection should be withdrawn.

Applicant submit that in view of the foregoing amendments and comments, claims 1-4, 6-8, 10-14, 20, 21, 23 and 25 are in condition for allowance and prompt favorable action is solicited.

Respectfully submitted,

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